

RECEIVED

AUG 29 2001

1642

TECH CENTER 1600/2900

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/744,406A

DATE: 07/26/2001

TIME: 16:58:09

Input Set.: A:\Halpern.app

Output Set: N:\CRF3\07262001\I744406A.raw

ENTERED

ENTERED

3 <110> APPLICANT: Halpern, Michael S
 4 England, James M.
 5 Allegheny University of the Health Sciences
 7 <120> TITLE OF INVENTION: Allogeneic Cellular Immunogens Useful As Cancer
 8 Vaccines
 10 <130> FILE REFERENCE: 7933-38 PC
 C--> 12 <140> CURRENT APPLICATION NUMBER: US/09/744,406A
 C--> 13 <141> CURRENT FILING DATE: 2001-01-22
 15 <150> PRIOR APPLICATION NUMBER: 60/093,965
 16 <151> PRIOR FILING DATE: 1998-07-24
 18 <160> NUMBER OF SEQ ID NOS: 14
 20 <170> SOFTWARE: PatentIn Ver. 2.0
 22 <210> SEQ ID NO: 1
 23 <211> LENGTH: 27
 24 <212> TYPE: DNA
 25 <213> ORGANISM: Artificial Sequence
 27 <220> FEATURE:
 28 <223> OTHER INFORMATION: Description of Artificial Sequence: One strand of
 29 db1-stranded oligomer for altering c-src codon 527
 31 <400> SEQUENCE: 1
 32 ccagttccag cctggagaga acctata 27
 34 <210> SEQ ID NO: 2
 35 <211> LENGTH: 35
 36 <212> TYPE: DNA
 37 <213> ORGANISM: Artificial Sequence
 39 <220> FEATURE:
 40 <223> OTHER INFORMATION: Description of Artificial Sequence: One strand of
 41 db1-stranded oligomer for altering c-src codon 527
 43 <400> SEQUENCE: 2
 44 gatctatagg ttctctccag gctggaactg gggct 35
 46 <210> SEQ ID NO: 3
 47 <211> LENGTH: 1599
 48 <212> TYPE: DNA
 49 <213> ORGANISM: Mus musculus
 51 <400> SEQUENCE: 3
 52 gagactgtgc cctgtccacg gtgcctcctg catgtcctgc tgccctgagc tgtcccagac 60
 53 taggtgacag cgtaccacgc tgccaccatg aatgaggtgt ctgtcatcaa agaaggctgg 120
 54 ctccacaagc gtggtgaata catcaagacc tggaggccac ggtacttcct gctgaagagc 180
 55 gacgggtcct tcattgggta caaggagagg cccgaggccc ctgatcagac tctaccccc 240
 56 ttaaacaact tctccgtagc agaatgccag ctgatgaaga ccgagaggcc gcgacccaac 300
 57 acctttgtca tacgtgcct gcagtggacc acagtcatcg agaggacctt ccacgtggat 360
 58 tctccagacg agagggagga gtggatgcgg gccatccaga tggtcgcca cagcctcaag 420
 59 cagcgggccc caggcgagga ccccatggac tacaagtgtg gctccccag tgactcctcc 480
 60 accgactgag agatggaagt ggcggtcagc aaggcacggg cttaaagtgc catgaatgac 540
 61 ttgcactatc tcaactcct tggcaaggga acctttggca aagtcactct ggtgcgggag 600
 62 aaggccactg gccgtacta cgccatgaag atcctgcgaa aggaagtcac cattgccaa 660
 63 gatgaagtgc ctacacagt caccgagagc cgggtcctcc agaacaccag gcaccggttc 720

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/744,406A

DATE: 07/26/2001

TIME: 16:58:09

RECEIVED

AUG 29 2001

Input Set : A:\Halpern.app

Output Set: N:\CRF3\07262001\I744406A.raw

TECH CENTER 1600/2900

```

64 ctcaactgcgc tgaagtatgc ctccagacc caccgaccgcc tgtgctttgt gatggagtat 780
65 gccaacgggg gtgagctgtt ctccacctg tcccgggagc gtgtcttcac agaggagcgg 840
66 gcccggtttt atggtgcaga gattgtctcg gctcttgagt acttgcactc gcgggacgtg 900
67 gtataccgcg acatcaagct ggaaaacctc atgtggaca aagatggcca catcaagatc 960
68 actgactttg gcctctgcaa agagggcatc agtgacgggg ccaccatgaa aaccttctgt 1020
69 gggaccccggt agtacctggc gcctgaggtg ctggaggaca atgactatgg ccggggccgtg 1080
70 gactgggtggg ggctgggtgt ggtcatgtac gagatgatgt gcggccgcct gcccttctac 1140
71 aaccaggacc acgagcgctt ctccagctc atcctcatgg aagagatccg ctcccgcgcg 1200
72 acgtcagacc ccgaggccaa gtccctgctt gctgggctgc ttaagaagga cccaagcag 1260
73 aggtctgggtg gggggcccg cgtgccaag gaggtcatgg agcacaggtt ctccctcagc 1320
74 atcaactggc aggacgtggt ccagaagaag ctccctgccac ccttcaaacc tcaggtcacg 1380
75 tccgaggtcg acacaaggta ctccgatgat gaatttaccg ccaggtccat cacaatcaca 1440
76 cccctgacc gctatgacag cctgggctta ctggagctgg accagcggac ccacttcccc 1500
77 cagttctcct actcgccag catccgcgag tgagcagttt gccacgcag aggcgcacg 1560
78 ctcgctgcca tcaccgctgg gtggtttttt acccctgcc 1599

```

80 <210> SEQ ID NO: 4

81 <211> LENGTH: 4530

82 <212> TYPE: DNA

83 <213> ORGANISM: Human

85 <400> SEQUENCE: 4

```

86 aattctcgag ctgctgacc ggtcgacgag ctcgagggtc gacgagctcg agggcgcgcg 60
87 cccggcccc acccctgcca gcaccccgcg ccccgcgccc tccagccgg gtccagccgg 120
88 agccatgggg ccggagccgc agtgagcacc atggagctgg cggccttggt ccgtggggg 180
89 ctccctcctg cctctttgcc ccccgagcc gcgagcacc aagtgtgcac cggcacagac 240
90 atgaagctgc ggtccctgc cagtcctgag accacctgg acatgctcc ccacctctac 300
91 cagggtgccc aggtggtgca gggaaacct gaactcacct acctgccac caatgccagc 360
92 ctgtccttcc tgcaggatat ccaggaggtg cagggtacg tgctcatcg tcacaaccaa 420
93 gtgaggcagg tccactgca gaggctgcgg attgtgcgag gcacccagct ctttgaggac 480
94 aactatgccc tggccgtgct agacaatgga gaccgcgtga acaataccac ccctgtcaca 540
95 ggggcctccc caggaggcct gcgggagctg cagcttcgaa gcctcacaga gatcttgaag 600
96 ggaggggtct tgatccagcg gaacccccag ctctgctacc aggacacgat tttgtggaag 660
97 gacatcttcc acaagaacaa ccagctggct ctcaactga tagacaccaa ccgtctcgg 720
98 gcctgccacc cctgttctcc gatgtgtaag ggtcccgct gctggggaga gagttctgag 780
99 gattgtcaga gcctgacgcg cactgtctgt gccggtggt gtgcccgtg caaggggcca 840
100 ctgcccactg actgctgcca tgagcagttt gctgccggct gcacgggcc caagcactct 900
101 gactgectgg cctgcttcca ctccaaccac agtggcatct gtgagctgca ctgcccagcc 960
102 ctggtcacct acaacacaga cagttttgag tccatgccc atcccaggg ccggtatata 1020
103 ttggcgcca gctgtgtgac tgcctgtccc tacaactacc tttctacgga cgtgggatcc 1080
104 tgcacctcg tctgccccct gcacaaccaa gaggtgacag cagaggatgg aacacagcgg 1140
105 tgtgagaagt gcagcaagcc ctgtgcccga gtgtgctatg gtctgggcat ggagcacttg 1200
106 cgagaggtga gggcagttac cagtccaat atccaggagt ttgctggctg caagaagatc 1260
107 tttgggagcc tggcatttct gccggagagc tttgatgggg acccagcctc caacactgcc 1320
108 ccgtccagc cagagcagct ccaagtgttt gagactctgg aagagatcac aggttaccta 1380
109 tacatctcag catggccgga cagcctgctt gacctcagcg tcttcagaa cctgcaagta 1440
110 atccggggac gaattctgca caatggcgcc tactcgctga ccctgcaagg gctgggcatc 1500
111 agctggctgg ggtgcgctc actgaggga ctgggcagtg gactggcct catccaccat 1560
112 aacacccacc tctgttctgt gcacacggtg ccctgggacc agctctttcg gaacccgcac 1620
113 caagctctgc tccacactgc caaccggcca gaggacgagt gtgtgggcca gggcctggcc 1680
114 tgccaccage tgtgcgccc agggcactgc tgggtccag gggccacca gtgtgtcaac 1740

```

RAW SEQUENCE LISTING

DATE: 07/26/2001

PATENT APPLICATION: US/09/744,406A

TIME: 16:58:09

Input Set : A:\Halpern.app

Output Set: N:\CRF3\07262001\I744406A.raw

```

115 tgcagccagt tccttcgggg ccaggagtgc gtggaggaat gccgagtact gcaggggctc 1800
116 cccagggagt atgtgaatgc caggcactgt ttgccgtgcc accctgagtg tcagccccag 1860
117 aatggctcag tgacctgttt tggaccggag gctgaccagt gtgtggcctg tgcccactat 1920
118 aaggaccctc ccttctgcgt ggcccgctgc cccagcgggtg tgaaacctga cctctcctac 1980
119 atgcccattc ggaagtttcc agatgaggag ggcgcagtgc agccttgccc catcaactgc 2040
120 acccactcct gtgtggacct ggatgacaag ggctgccccg ccgagcagag agccagccct 2100
121 ctgacgtcca tcgtctctgc ggtggttggc attctgctgg tcgtggtctt gggggtggtc 2160
122 tttgggatcc tcatcaagcg acggcagcag aagatccgga agtacacgat gcggagactg 2220
123 ctgcaggaaa cggagctggt ggagccgctg acacctagcg gagcgatgcc caaccaggcg 2280
124 cagatgcgga tcctgaaaga gacggagctg aggaaggtga aggtgcttgg atctggcgct 2340
125 tttggcacag tctacaaggg catctggatc cctgatgggg agaatgtgaa aattccagtg 2400
126 gccatcaaag tgttgaggga aaacacatcc cccaaagcca acaaagaaat cttagacgaa 2460
127 gcatacgtga tggctgggtg gggctcccca tatgtctccc gccttctggg catctgcctg 2520
128 acatccacgg tgcagctggt gacacagctt atgccctatg gctgcctctt agaccatgtc 2580
129 cgggaaaacc gcggacgcct gggctcccag gacctgctga actggtgtat gcagattgcc 2640
130 aaggggatga gctacctgga ggatgtgogg ctcgtaacaca gggacttggc cgctcggaac 2700
131 gtgctggtca agagtcccaa ccatgtcaaa attacagact tcgggctggc tcggctgctg 2760
132 gacattgacg agacagagta ccatgcagat gggggcaagg tgcccatcaa gtggatggcg 2820
133 ctggagtcca ttctccgccc gcggttcacc caccagagtg atgtgtggag ttatggtgtg 2880
134 actgtgtggg agctgatgac ttttggggcc aaaccttacg atgggatccc agcccgggag 2940
135 atccctgacc tgctggaaaa gggggagcgg ctgcccagc ccccatctg caccattgat 3000
136 gtctacatga tcatggtcaa atgttgatg attgactctg aatgtcggcc aagattccgg 3060
137 gagtgtgtgt ctgaattctc ccgcattggc agggaccccc agcgctttgt ggtcatccag 3120
138 aatgaggact tgggcccagc cagtcccttg gacagcacct tctaccgctc actgctggag 3180
139 gacgatgaca tgggggacct ggtggatgct gaggagtatc tggtaaccca gcagggcttc 3240
140 ttctgtccag accctgcccc gggcgctggg ggcattggtcc accacaggca ccgcagctca 3300
141 tctaccagga gtggcggtgg ggacctgaca ctagggtctg agccctctga agaggaggcc 3360
142 cccaggtctc cactggcacc ctccgaaggg gctggctccg atgtatttga tggtgacctg 3420
143 ggaatggggg cagccaaggg gctgcaaagc ctcccacac atgaccccag ccctctacag 3480
144 cggtagctg aggaccccac agtaccctg ccctctgaga ctgatggcta cgttgcccc 3540
145 ctgacctgca gccccagcc tgaatatgtg aaccagccag atgttcggcc ccagccccct 3600
146 tcgccccgag agggccctct gcctgctgcc cgacctgctg gtgccactct ggaaagggcc 3660
147 aagactctct cccaggggaa gaatggggtc gtcaaagacg tttttgcctt tgggggtgcc 3720
148 gtggagaacc ccgagtactt gacaccccag ggaggagctg ccctcagcc ccacctcct 3780
149 cctgccttca gcccagcctt cgacaacctc tattactggg accaggacct accagagcgg 3840
150 ggggctccac ccagcacctt caaagggaca cctacggcag agaaccaga gtacctgggt 3900
151 ctggacgtgc cagtgtgaac cagaaggcca agtccgcaga agccctgatg tgtcctcagg 3960
152 gagcagggaa ggcctgactt ctgctggcat caagaggtgg gagggccctc cgaccacttc 4020
153 caggggaacc tgccatgcca ggaacctgtc ctaaggaaacc ttccttcctg cttgagttcc 4080
154 cagatggctg gaaggggtcc agcctcgttg gaagaggaa agcactgggg agtctttgtg 4140
155 gattctgagg ccctgccc aa tgagactcta gggccagtg gatgccacag cccagcttgg 4200
156 ccctttcctt ccagatcctg ggtactgaaa gccttaggga agctggcctg agaggggaa 4260
157 cgccctaag ggagtgtcta agaacaaaag cgaccattc agagactgtc cctgaaacct 4320
158 agtactgcc cccatgagga aggaacagca atggtgtcag tatccaggct ttgtacagag 4380
159 tgcttttctg tttagttttt actttttttg ttttgtttt ttaaagacga aataaagacc 4440
160 caggggagaa tgggtgttgt atggggaggc aagtgtgggg ggtccttctc cacaccact 4500
161 ttgtccattt gcaaatatat tttggaaaa ✓ 4530
163 <210> SEQ ID NO: 5
164 <211> LENGTH: 891

```

RAW SEQUENCE LISTING

DATE: 07/26/2001

PATENT APPLICATION: US/09/744,406A

TIME: 16:58:09

Input Set : A:\Halpern.app

Output Set: N:\CRF3\07262001\I744406A.raw

```

165 <212> TYPE: DNA
166 <213> ORGANISM: Human
168 <400> SEQUENCE: 5
169 atgtgcaata ccaacatgtc tgtacctact gatggtgctg taaccacctc acagattcca 60
170 gcttcggaac aagagaccct ggatcttgat gctggtgtaa gtgaacattc aggtgattgg 120
171 ttggatcagg attcagtttc agatcagttt agtgtagaat ttgaagttga atctctcgac 180
172 tcagaagatt atagccttag tgaagaagga caagaactct cagatgaaga tgatgaggta 240
173 tatcaagtta ctgtgtatca ggcaggggag agtgatacag attcatttga agaagatcct 300
174 gaaattttcct tagctgacta ttggaaatgc acttcatgca atgaaatgaa tccccccctt 360
175 ccatcacatt gcaacagatg ttgggccctt cgtgagaatt ggcttctga agataaaggg 420
176 aaagataaag gggaaatctc tgagaaagcc aaactggaaa actcaacaca agctgaagag 480
177 ggctttgatg ttcttgattg taaaaaaact atagtgaatg attccagaga gtcatgtgtt 540
178 gaggaaaatg atgataaaat tacacaagct tcacaatcac aagaaagtga agactattct 600
179 cagccatcaa cttctagtag cattatttat agcagccaag aagatgtgaa agagtttgaa 660
180 agggaagaaa cccaagacaa agaagagagt gtggaatcta gtttgccctt taatgccatt 720
181 gaacctttgtg tgattttgtca aggtcgacct aaaaatggtt gcattgtcca tggcaaaaca 780
182 ggacatctta tggcctgctt tacatgtgca aagaagctaa agaaaaggaa taagccctgc 840
183 ccagtatgta gacaaccaat tcaaattgatt gtgctaactt atttccccta g ✓ 891
185 <210> SEQ ID NO: 6
186 <211> LENGTH: 657
187 <212> TYPE: DNA
188 <213> ORGANISM: Human
190 <400> SEQUENCE: 6
191 atgtgcaata ccaacatgtc tgtacctact gatggtgctg taaccacctc acagattcca 60
192 gcttcggaac aagagaccct ggactatttg aaatgcactt catgcaatga aatgaatccc 120
193 ccccttccat cacattgcaa cagatgttgg gcccttcgtg agaattggct tcctgaagat 180
194 aaaggggaaag ataaagggga aatctctgag aaagccaaac tggaaaactc aacacaagct 240
195 gaagagggct ttgatgttcc tgattgtaaa aaaactatag tgaatgattc cagagagtca 300
196 tgtgttgagg aaaatgatga taaaattaca caagcttcac aatcacaaga aagtgaagac 360
197 tattctcagc catcaacttc tagtagcatt atttatagca gccagaaga tgtgaaagag 420
198 ttgtgaaagg aagaaaccca agacaaagaa gagagtgtgg aatctagttt gcccttaat 480
199 gccattgaac cttgtgtgat ttgtcaaggt cgacctaaaa atggttgcatt tgtccatggc 540
200 aaaacaggac atcttatggc ctgctttaca tgtgcaaaga agctaaagaa aaggaataag 600
201 ccctgccagc tatgtagaca accaattcaa atgattgtgc taacttattt cccctag 657
203 <210> SEQ ID NO: 7
204 <211> LENGTH: 966
205 <212> TYPE: DNA
206 <213> ORGANISM: Human
208 <400> SEQUENCE: 7
209 atgtgcaata ccaacatgtc tgtacctact gatggtgctg taaccacctc acagattcca 60
210 gcttcggaac aagagaccct ggtagacca aagccattgc ttttgaagtt attaaagtct 120
211 gttggtgcac aaaaagacac ttatactatg aaagaggatc ttgatgctgg tgtaagtga 180
212 cattcagggtg attggttggg tcaggattca gtttcagatc agtttagtgt agaatttgaa 240
213 gttgaatctc tcgactcaga agattatagc cttagtgaag aaggacaaga actctcagat 300
214 gaagatgatg aggtatatca agttactgtg tatcaggcag gggagagtga tacagattca 360
215 ttgtgaaag atcctgaaat ttccttagct gactattgga aatgcacttc atgcaatgaa 420
216 atgaatcccc cccttccatc acattgcaac agatgttggg cccttcgtga gaattggctt 480
217 cctgaagata aaggggaaaga taaaggggaa atctctgaga aagccaaact ggaaaactca 540
218 acacaagctg aagagggtt tgatgttcct gattgtaaaa aaactatagt gaatgattcc 600

```

RAW SEQUENCE LISTING

DATE: 07/26/2001

PATENT APPLICATION: US/09/744,406A

TIME: 16:58:09

Input Set : A:\Halpern.app

Output Set: N:\CRF3\07262001\I744406A.raw

```

219 agagagtcac gtgttgagga aaatgatgat aaaattacac aagcttcaca atcacaagaa 660
220 agtgaagact attctcagcc atcaacttct agtagcatta tttatagcag ccaagaagat 720
221 gtgaaagagt ttgaaaggga agaaacccaa gacaaagaag agagtgtgga atctagtgtg 780
222 ccccttaatg ccattgaacc ttgtgtgatt tgtcaaggtc gacctaaaaa tggttgcatt 840
223 gtccatggca aaacaggaca tcttatggcc tgctttacat gtgcaaagaa gctaaagaaa 900
224 aggaataaag cctgcccagt atgtagacaa ccaattcaaa tgattgtgct aacttatttc 960
225 ccctag 966
227 <210> SEQ ID NO: 8
228 <211> LENGTH: 399
229 <212> TYPE: DNA
230 <213> ORGANISM: Human
232 <400> SEQUENCE: 8
233 atgtgcaata ccaacatgtc tgtacctact gatggtgctg taaccacctc acagattcca 60
234 gcttcggaac aagagaccct ggtagacaa gaaagtgaag actattctca gccatcaact 120
235 tctagtagca ttatttatag cagccaagaa gatgtgaaag agtttgaaag ggaagaaacc 180
236 caagacaaag aagagagtgt ggaatctagt ttgccctta atgccattga accttgtgtg 240
237 atttgtcaag gtcgacctaa aaatggttgc attgtccatg gcaaaacagg acatcttatg 300
238 gcctgcttta catgtgcaaa gaagctaaag aaaaggaata agccctgccc agtatgtaga 360
239 caaccaattc aaatgattgt gctaacttat ttcccctag 399
241 <210> SEQ ID NO: 9
242 <211> LENGTH: 309
243 <212> TYPE: DNA
244 <213> ORGANISM: Human
246 <400> SEQUENCE: 9
247 atgtgcaata ccaacatgtc tgtacctact gatggtgctg taaccacctc acagattcca 60
248 gcttcggaac aagagaccct ggtagacca aagccattgc ttttgaagtt attaaagtct 120
249 gttggtgcac aaaaagacac ttatactatg aaagagggtc ttttttatct tggccagtat 180
250 attatgacta aacgattata tgatgagaag caacaacata ttgtaaatga ttgtgctaac 240
251 ttatttcccc tagttgacct gtctataaga gaattatata tttctaacta tataacccta 300
252 ggaatttag 309
254 <210> SEQ ID NO: 10
255 <211> LENGTH: 1897
256 <212> TYPE: DNA
257 <213> ORGANISM: Avian myeloblastosis virus
259 <400> SEQUENCE: 10
260 cacagataag gttatttggg taccctctcg aaaagttaaa ccggacatcg cccaaaagga 60
261 tgaggtgact aagaaagatg aggcgagccc tctttttgca ggctggaggc acatagataa 120
262 gagaattatc actctacatt catctttctc aaagattaat ctacttgtgt gttttatatt 180
263 tcattagaat cggacagatg ttcagtgccg gcaccggtgg cagaaaagtat taaaccacaga 240
264 acttaacaaa ggtccatgga ctaaagagga ggatcaaagg gtaatagaac acgtgcagaa 300
265 atacggtcca aagcgtggtt cggacattgc taagcatttg aagggaagga ttggaaaaca 360
266 gtgcagggag aggtggcaca accatctgaa tccagaagtg aagaaaacct cctggacaga 420
267 agaggaagat agaattattt accaggcaca caagagactg ggaaacagat gggcagaaat 480
268 tgcaaagttg ctgcctggac ggactgataa cgctgtcaag aaccactgga attccaccat 540
269 gcgccggaag gtcgagcagg agggttaccc gcaggagtcc tccaaagccg gcccgccctc 600
270 ggcaaccacc ggcttcacga agagcagcca tctgatggcc tttgccaca acccacctgc 660
271 aggccgcgtc ccgggggccc gccaggcccc tctgggcagt gactaccctt actaccacat 720
272 tgctgagcca caaaatgtcc ctggtcagat cccatatcca gtagcactgc atataaatat 780
273 tatcaatgtt cctcagccag ctgctgcagc tattcagaga cactatactg atgaagaccc 840

```

VERIFICATION SUMMARY

DATE: 07/26/2001

PATENT APPLICATION: US/09/744,406A

TIME: 16:58:10

Input Set : A:\Halpern.app

Output Set: N:\CRF3\07262001\I744406A.raw

L:12 M:270 C: Current Application Number differs, Replaced Application Number

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date